

**Comments by
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to the State Water Resources Control Board (SWRCB)**

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I am here today as part of a three-person panel to facilitate your consideration of power-related interests and concerns. The Western Area Power Administration (Western) and the representatives of the Sacramento Municipal Utility District (SMUD) and the Northern California Power Agency (NCPA) present with me today support efforts by the SWRCB to improve water quality conditions in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Delta). I do want to reiterate Western's request that you consider the importance of evaluating the economic impact to power generation in Northern California as part of a balanced decision making process for implementing new water quality standards for the Delta.

2. How should the economic and social effects of alternative standards be determined?

Western understands the important role economic factors play in regards to decisions made by the SWRCB. For this reason, my staff and representatives of the CVP Customer Technical Committee have been meeting with SWRCB staff to form the framework for Western's participation in evaluating the potential impacts to CVP power generation. Western has offered and your staff is willing to incorporate our analysis of the alternatives that will be used to determine the final water quality standards. Western appreciates the reception we have received to date from members of the SWRCB and is eager to work together in the future.

In recent discussions with members of the SWRCB, it was suggested that Western present its plan for studying the alternatives today, including some information related to the tools that will be used to evaluate the impacts. The following is a brief synopsis of the proposed evaluation Western intends to provide to the SWRCB.

Western will model the hydrologic record from 1922 to 1992 using the PROSIM model. PROSIM is the acronym for the PROject SIMulation model developed by the U.S. Bureau of Reclamation (Reclamation). It is a planning model designed to simulate the operation of the CVP and State Water Project (SWP) with current facilities and policies including the Coordinated Operations Agreement (COA) between Reclamation and the Department of Water Resources for purposes of water supply, flood control storage, recreation, instream flow augmentation, and hydroelectric power generation. PROSIM represents the CVP and SWP systems by a network of computation points or nodes depicting reservoirs, diversions,

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stream inflow points, and pumping plants.

Data output associated with CVP generation will be on a monthly and annual basis. The data will be of the following nature:

- * Annual generation for each year of the 70 years
- * Monthly generation aggregated into the five water year types (wet, above normal, below normal, dry and critically dry)
- * Overall monthly average generation for the entire 70 years
- * Annual Project Use¹
- * Monthly Project Use aggregated by the five water year types
- * Overall monthly average Project Use for the entire 70 years

Annual generation amounts are used to evaluate the power benefits in an overall relation, whereas monthly generation helps to determine the "value" of the power. Hydro generation is of a greater value to Western and its customers in the late summer and early fall. In some alternatives, Western could realize an overall increase in generation from one alternative to the next, but that increase in generation could be during months it has a decreased value in the bulk power market. The resultant economic impact is less "valuable" generation in the late summer and early fall months, when it is most needed.

In consultation with the SWRCB's staff, Western has agreed to compare the proposed alternatives to a set of base conditions. The "base case" will be that set of water operations bounded by the SWRCB water right decision D-1485 plus any current operational changes or constraints due to the implementation of the National Marine Fisheries Services biological opinions.

For each alternative the PROSIM output is evaluated using a production cost model. PROSYM, or Project Simulation Model, is a chronological, economic dispatch, production cost model. PROSYM is used for simulating hydroelectric generation within given constraints, including water releases, to satisfy the electric system load modeled. It dispatches the hydro generation to maximize the value of the hydroelectric energy and capacity, within the constraints of the re-regulating reservoirs. After maximizing the hydro generation, other generating resources are dispatched to

¹Project use is CVP power requirements for specific purposes. Project use loads are determined by Reclamation. An example of project use power is the power used to run the pumps at the Tracy Pumping Plant to pump water into the Delta Mendota Canal or the Federal portion of the power needed at San Luis to pump water into the San Luis Reservoir.

satisfy the electric system load modeled. The model output will contain the following information:

- * Hourly On- and Off-peak Project Use
- * Maximum load carrying capacity, peaking component
- * Maximum load carrying capacity, baseload component
- * Hourly On- and Off-peak energy generating

From these PROSYM outputs Western will be able to demonstrate the economic impact, environmental impact, and Western's competitiveness in the market for a variety of situations. For example, if the evaluation determines a need for Western to purchase supplemental power because CVP generation is insufficient to meet customer load, the impact to Western's power rates will be analyzed. If the study demonstrates CVP generation has been shifted as a result of high water releases in the late spring and early summer months, the impact due to a less "valued" product being offered in the bulk power market will be analyzed.

Environmental factors will also be considered. Namely, the potential harm to air quality because of a possible shift from hydropower generation to fossil fuel or other air polluting technologies to generate replacement power, compared to hydropower generation that emits no air pollutants. Impacts to Western's preference power customers in regards to other fixed costs, namely the Restoration Fund, will also be evaluated by Western.

While the PROSYM model will demonstrate changes to CVP power generation, it should be kept in mind that other variables could enter into the picture in the near future and these variables could have an additive impact on the CVP. The proposed standards for the Delta are just one of many potential impacts to CVP generation being discussed. At this time it is unknown what impacts will be felt by the implementation of the Central Valley Project Improvement Act Programmatic Environmental Impact Statement; changes to instream flows and hence changes to diversions through the tunnels and powerplants due to the Trinity River Restoration Program; changes in river operations due to the San Joaquin River Comprehensive Plan; and changes to flood control measures and carryover storage on the American River. Total impacts to the CVP are the combination of all of these unknowns plus Delta water quality standards.

3. Should the SWRCB request the CVP and SWP to implement portions of the draft standards prior to adoption of a water rights decision?

Western believes without knowing the significant economic impacts at this time, we cannot make a suggestion to the SWRCB about interim measures. Western wants to be supportive of the SWRCB's efforts, but at the same time we want the burden of implementing

the standards to be shared equitably. If the implementation of a portion of the standards causes an undue hardship the CVP, Western believes this portion of the standard should not be implemented without a decision by the SWRCB to proportion the burden equitably to other users.